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Approved for use through 10/31/2002. OMB 0651-0032  
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

<b>DECLARATION AND POWER OF ATTORNEY FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63)</b>  <input type="checkbox"/> Declaration Submitted with Initial Filing      OR <input checked="" type="checkbox"/> Declaration Submitted after Initial Filing (surcharge (37 CFR 1.16 (e)) required)	Attorney Docket Number	Poly-47
	First Named Inventor	Stephen ARNOLD
	<b>COMPLETE IF KNOWN</b>	
	Application Number	10/758,248
	Filing Date	January 15, 2004
	Art Unit	2878
Examiner Name	Not yet assigned	

As the below named inventor, I hereby declare that:

My residence, mailing address, and citizenship are as stated below next to my name.

I believe I am the original and first inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled:

**PERTURBATION APPROACH TO RESONANCE SHIFT OF WHISPERING GALLERY MODES IN A DIELECTRIC MICROSPHERE AS A PROBE OF A SURROUNDING MEDIUM**

(Title of the Invention)

the specification of which

☐ is attached hereto

OR

☒ was filed on (MM/DD/YYYY) **January 15, 2004** as United States Application Number or PCT International

Application Number **10/758,248** and was amended on (MM/DD/YYYY) (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or (f), or 365(b) of any foreign application(s) for patent, inventor's or plant breeder's rights certificate(s), or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent, inventor's or plant breeder's rights certificate(s), or any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?	
				YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto:

[Page 1 of 3]

Burden Hour Statement: This form is estimated to take 21 minutes to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Modified PTO/SB/01 (10-01)  
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**DECLARATION AND POWER OF ATTORNEY**  
**Utility or Design Patent Application**

**Power of Attorney:**

As a named inventor, I hereby appoint:

John C. Pokotylo (Reg. No. 36,242)  
Michael P. Straub (Reg. No. 36,941)  
Ronald P. Straub (Reg. No. 48,941)

as my attorneys to prosecute this application and to transact all business in the United States Patent and Trademark Office in connection therewith.

Modified PTO/SB/01 (10-01)

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# DECLARATION AND POWER OF ATTORNEY

## Utility or Design Patent Application

Direct all correspondence to: <input checked="" type="checkbox"/>		Customer Number or Bar Code Label		26479		OR <input type="checkbox"/> Correspondence address below	
Name Straub & Pokorylo							
Address 620 Tinton Avenue, Bldg. B, 2 <sup>nd</sup> Floor							
City Tinton Falls				State NJ		ZIP 07724-3260	
Country USA		Telephone (732) 542-9070			Fax (732) 542-9071		
I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.							
NAME OF SOLE OR FIRST INVENTOR:				<input type="checkbox"/> A petition has been filed for this unsigned inventor			
Given Name (first and middle [if any]) Stephen				Family Name or Surname ARNOLD			
Inventor's Signature <i>Stephen Arnold</i>						Date 7/29/04	
Residence: City New York		State NY		Country USA		Citizenship USA	
Mailing Address 1 Washington Square Village, Apt. # 13L							
City New York		State NY		ZIP 10012		Country USA	
NAME OF SECOND INVENTOR:				<input type="checkbox"/> A petition has been filed for this unsigned inventor			
Given Name (first and middle [if any]) Iwao				Family Name or Surname TERAOKA			
Inventor's Signature <i>Iwao Teraoka</i>						Date 7/29/04	
Residence: City Rye		State NY		Country USA		Citizenship USA	
Mailing Address 32 Glen Oaks Drive							
City Rye		State NY		ZIP 10580		Country USA	
<input checked="" type="checkbox"/> Additional inventors are being named on the <u>1</u> supplemental Additional Inventor(s) sheet(s) PTO/SB/02A attached hereto.							

Please type a plus sign (+) inside this box → 

Modified PTO/BB/02A (11-00)  
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<b>DECLARATION AND POWER OF ATTORNEY</b>	<b>ADDITIONAL INVENTOR(S) Supplemental Sheet Page 4 of 4</b>
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Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor	
Given Name (first and middle (if any))		Family Name or Surname	
Frank		VOLLMER	
Inventor's Signature <i>Frank Vollmer</i>		Date 7/29/04	
Residence: City New York	State NY	Country USA	Citizenship Germany
Mailing Address 1230 York Avenue, Box 155			
Mailing Address			
City New York	State NY	ZIP 10021	Country USA
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor	
Given Name (first and middle (if any))		Family Name or Surname	
Inventor's Signature		Date	
Residence: City	State	Country	Citizenship
Mailing Address			
Mailing Address			
City	State	ZIP	Country
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor	
Given Name (first and middle (if any))		Family Name or Surname	
Inventor's Signature		Date	
Residence: City	State	Country	Citizenship
Mailing Address			
Mailing Address			
City	State	ZIP	Country

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Atty. Doc. No.: Poly-47

**ASSIGNMENT**

WHEREAS, we, **Stephen ARNOLD**, ASSIGNOR

a citizen of the USA, residing at 1 Washington Square  
Village, Apt. # 13L, New York, NY 10012;

**Iwao TERAOKA**, ASSIGNOR

a citizen of the USA, residing at 32 Glen Oaks Drive, Rye,  
NY 10580; and

**Frank VOLLMER**, ASSIGNOR

a citizen of Germany, residing at 1230 York Avenue, Box  
155, New York, NY 10021;

are the inventors of the invention in:

**PERTURBATION APPROACH TO RESONANCE SHIFT OF WHISPERING  
GALLERY MODES IN A DIELECTRIC MICROSPHERE AS A PROBE OF A  
SURROUNDING MEDIUM**

for which an application for a Patent of the United States

☒ was filed on January 15, 2004, as application  
serial number 10/758,248, or

☐ is filed herewith;

and WHEREAS, **Polytechnic University**, a corporation of New  
York, having a place of business at Office of Academic  
Affairs, 6 Metrotech Center, Brooklyn, NY 11201, ASSIGNEE

is desirous of obtaining the entire right, title and  
interest in, to and under the invention and the  
application:

NOW, THEREFORE, in consideration of the sum of One Dollar  
(\$1.00) to us in hand paid, and other good and valuable  
consideration, the receipt of which is hereby acknowledged,  
WE, the ASSIGNORS, have sold, assigned, transferred and set

over, and by these presents do hereby sell, assign, transfer and set over, unto the ASSIGNEE, its successors, legal representatives and assigns, the entire right, title and interest in, to and under the invention, and the United States application and all divisions, renewals and continuations (including all continuation-in-part applications) thereof, and all Patents of the United States which may be granted thereon and all reissues and extensions thereof; and all applications for industrial property protection, including, without limitation, all applications for patents, utility models and designs which have been or may hereafter be filed for the invention or claim the benefit of the application or any right of priority to the application, in any and all countries including any country or countries foreign to the United States, together with the right to file such applications and the right to claim for the same the priority rights derived from the United States application under the Patent Laws of the United States, the International Convention for the Protection of Industrial Property, or any other international agreement or the domestic laws of the country in which any such application is filed, as may be applicable; and all forms of industrial property protection, including, without limitation, patents, utility models, inventor's certificates and designs which may be granted for the invention in any country or countries foreign to the United States and all extensions, renewals and reissues thereof;

AND WE HEREBY authorize and request the Commissioner of Patents and Trademarks of the United States, and any official of any country or countries foreign to the United States, whose duty it is to issue patents or other evidence or forms of industrial property protection on applications as aforesaid, to issue the same to the ASSIGNEE, its successors, legal representatives and assigns, in accordance with the terms of this instrument.

AND WE HEREBY covenant and agree that we have full right to convey the entire interest assigned, and that we have not executed, and will not execute, any agreement in conflict herewith.

AND WE HEREBY further covenant and agree that we will communicate to the ASSIGNEE, its successors, legal representatives and assigns, any facts known to us regarding the invention, and testify in any legal

proceeding, sign all lawful papers, execute all divisional, continuing, reissue and foreign applications, make all rightful oaths, and generally do everything possible to aid the ASSIGNEE, its successors, legal representatives and assigns, to obtain and enforce proper protection for the invention in all countries.

The undersigned hereby grant(s) the law firm of Straub & Pokotylo the power to insert on this Assignment any further identification, including the application serial number, which may be necessary or desirable in order to comply with the rules of the U.S. Patent and Trademark Office for recordation of this document.

IN TESTIMONY WHEREOF, I hereunto set my hand and seal this  
29 day of July, 2004.

Stephen Arnold  
Stephen Arnold, Assignor

WITNESSED BY:

IWAU TERAOKA  
Name  
32 Glen Oaks Dr.  
Address  
Rye NY 10580

WITNESSED BY:

CAROL CAMPBELL  
Name  
6 Metrotech Ctr, JB256  
Address  
Brooklyn, NY 11201  
Carol A. Campbell  
CAROL A. CAMPBELL  
Notary Public, State of New York  
No. 01CA5073664  
Qualified in Nassau County  
Commission Expires March 03, 2006



IN TESTIMONY WHEREOF, I hereunto set my hand and seal this  
29 day of July, 2004.

Iwao Teraoka  
Iwao Teraoka, Assignor

WITNESSED BY:

STEPHEN ARNOLD  
Name

1 WASH. SQ. VLG. 136  
Address

NEW YORK, NY 10012

WITNESSED BY:

CAROL CAMPBELL  
Name

6 Metrotech Ctr, JB256  
Address

Brooklyn, NY 11201

Carol A. Campbell  
CAROL A. CAMPBELL  
Notary Public, State of New York  
No. 01CA5073684  
Qualified in Nassau County  
Commission Expires March 03, 20 06

IN TESTIMONY WHEREOF, I hereunto set my hand and seal this  
29 day of July, 2004.

Frank Vollmer  
Frank Vollmer, Assignor

WITNESSED BY:

STEPHEN ARNOLD  
Name

1 WASHINGTON SQ. VC6.13C  
Address

NY, NY 10012

WITNESSED BY:

Mona Goldberg  
Name

2122 E 28 St  
Address

Brooklyn N.Y. 11229

MONA GOLDBERG  
Notary Public, State of New York  
No. 01GO4777875  
Qualified in Kings County  
Commission Expires September 30, 2006